



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/967,281	09/27/2001	Ching-Wei Chang	SLA 1009	6798

7590 04/19/2005

David C. Ripma, Patent Attorney
Sharp Laboratories of America, Inc.
5750 NW Pacific Rim Boulevard
Camas, WA 98607

EXAMINER

BRINICH, STEPHEN M

ART UNIT	PAPER NUMBER
----------	--------------

2624

DATE MAILED: 04/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/967,281

Applicant(s)

CHANG, CHING-WEI

Examiner

Stephen M Brinich

Art Unit

2624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-18 and 20 is/are rejected.
- 7) ☒ Claim(s) 19 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date: ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>3/15/04</u> . | 6) <input type="checkbox"/> Other: ____ |

Art Unit: 2624

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-3, 6-7, 9-10, 16-18, & 20 are rejected under 35 U.S.C. 102(e) as being anticipated by Jacobs.

Re claims 1-3 & 16-17, Jacobs discloses (column 6, line 14 - column 7, line 43) an printer arrangement for processing and halftone rendering image data pixels in which additional information (tag 216) having one of two states is attached to each pixel. The pixel data is then accessed and subjected to halftone rendering in accordance with this tag (column 7, lines 7-43), using line screening if the tag is in a first state or a different grayscale halftoning technique if the tag is in a second state.

Re claims 6-7, Jacobs discloses (column 4, lines 18-22) the use of this arrangement to handle at least three types of

Art Unit: 2624

halftone (stochastic, line screen, and clustered dot). To identify three different cases inherently requires more than one bit of information (one bit of information can only distinguish between two different cases), and thus requires at least two bits of information.

Re claim 9, Jacobs further discloses (column 6, lines 38-40) distinguishing text and edge pixels.

Re claim 10, Jacobs discloses (column 4, lines 18-22) the use of this arrangement to handle at least three types of halftone (stochastic, line screen, and clustered dot). Jacobs does not explicitly disclose selection among four different types of halftone in accordance with a respective state of the tag bits, but does note that the selection is "not limited to" these three (thus teaching that a fourth type may be added and identified in the same manner by a corresponding fourth state of tag bits).

Re claims 18 & 20, Jacobs further discloses (column 6, lines 19-28) that the tags are assigned to each element of pixel data in response to an assessment of the pixel data (described as a byte, which by standard definition consists of eight bits associated therewith).

3. Claim 8 is rejected under 35 U.S.C. 102(e) as being anticipated by Jacobs, which incorporates Williams by reference.

Art Unit: 2624

Re claim 8, the Williams reference incorporated by reference into Jacobs (Jacobs column 6, lines 41-42) teaches the use of error diffusion halftoning (Williams column 4, lines 65-66).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 4-5 & 11-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jacobs in view of Harrington et al.

Re claims 4-5, 11, & 15, Jacobs discloses the elements noted above, but does not disclose the use of a software implementation of the disclosed method (which would inherently constitute a "printer driver", as it would control a printing device) on a computer or the use of a graphical device interface for deriving the source image data.

Harrington et al discloses (Abstract, Figure 2) the implementation of a halftone printing arrangement in which a computer provides a source image and transmits it to a computer

Art Unit: 2624

along with instructions for rendering the image as a printer output.

Jacobs and Harrington et al are combinable because they are from the field of halftone image rendering.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to implement the Jacobs arrangement for halftone image rendering in a computer with connected printer as shown in Harrington et al.

The suggestion/motivation for doing so would have been to enable a computer printer to use the pixel-selective halftone of Jacobs, thus allowing each region of an image rendered by a computer printer to be reproduced according to the optimum scheme for that region (see Jacobs column 4, lines 4-11).

Therefore, it would have been obvious to combine Jacobs with Harrington et al to obtain the invention as specified in claims 4-5, 11, & 15.

Re claim 12, Jacobs further discloses (column 6, lines 38-40) distinguishing text and edge pixels.

Re claim 13-14, (column 6, lines 18 & 66-67) describes the pixel data as one byte, which by standard definition consists of eight bits arranged from most to least significant (all of which are coupled to the tag data associated with that byte).

Art Unit: 2624

Allowable Subject Matter

6. Claim 19 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The art of record does not teach or suggest the recited arrangement of a first bit assessment block and two second bit assessment blocks in conjunction with the recited arrangement of selective pixel halftoning in accordance with associated additional data.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Crean et al, Loce et al (each), Nagarajan et al, and Li et al disclose further examples of pixel tagging and selection among multiple halftoning schemes.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen M. Brinich at 571-272-7430. The examiner can normally be reached on weekdays 7:00-4:30, alternate Fridays off.

Art Unit: 2624


Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Tech Center 2600 Customer Service center at 571-272-2600 or to the USPTO Contact Center at 800-786-9199 or 703-308-4357.

If attempts to contact the examiner and the Customer Service Center are unsuccessful, supervisor David Moore can be contacted at 571-272-7437.

Faxes pertaining to this application should be directed to the Tech Center 2600 official fax number, which is 703-872-9306.

Hand-carried or courier-delivered correspondence pertaining to this application should be directed to

US Patent and Trademark Office
220 South 20th Street
Crystal Plaza Two, Lobby, Room 1B03
Arlington VA 22202


Stephen M Brinich
Examiner
Art Unit 2624

smb
April 15, 2005